

December 8, 2022

Project Portal Cover Page

To:	USEPA
Cc:	NCG and NYC
From:	David Haury, Amanda Shellenberger, and Paul LaRosa, Anchor QEA, LLC
Re:	East Branch Early Action Focused Feasibility Study Annotated Outline

The *East Branch Early Action Focused Feasibility Study Annotated Outline* has been submitted to USEPA. This annotated outline includes a list of sections and subsections along with a brief description of the anticipated content for each section and subsection, as requested by USEPA in its comments on the June 2022 draft *Feasibility Study Work Plan Addendum 1: East Branch Expedited Action Focused Feasibility Study Work Plan* (FFS Work Plan).

The FFS Work Plan states that a detailed schedule, including review times and suggested meeting dates, will be included with the annotated outline in the submittal to USEPA. The project schedule, which includes review times for FFS deliverables, was submitted to USEPA on October 27, 2022. The proposed 2023 meeting dates were provided to USEPA on December 2, 2022. Both the project schedule and the proposed 2023 meeting dates are currently under USEPA review.

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Photo by Bill Rhodes

December 2022
Newtown Creek Remedial Investigation/Feasibility Study



East Branch Early Action Focused Feasibility Study Annotated Outline

Prepared for the Newtown Creek Group

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Prepared for
The Newtown Creek Group

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TABLE OF CONTENTS

1	Introduction	1
1.1	Site History.....	1
1.2	Focused Feasibility Study Objectives.....	1
1.3	Study Area Description and Background.....	1
1.4	Report Organization.....	1
2	East Branch Conceptual Site Model	2
2.1	East Branch Focused Feasibility Study Dataset.....	2
2.2	Environmental Setting.....	2
2.3	Nature and Extent of Contamination	2
2.4	Sources.....	2
2.5	Fate and Transport.....	2
2.6	Risk and Exposure Pathways.....	2
2.7	Key Findings, Conclusions, and Implications for the Focused Feasibility Study	3
3	Basis for Evaluation	4
3.1	Contaminants of Concern	4
3.2	Remedial Action Objectives	4
3.3	Applicable or Relevant and Appropriate Requirements	4
3.4	Preliminary Remediation Goals.....	4
3.5	Areas to Be Considered for Remediation	4
4	Identification of General Response Actions, Remedial Technologies, and Process Options.....	5
4.1	General Response Actions	5
4.2	Evaluation and Screening of Remedial Technologies and Process Options	6
4.2.1	No Action.....	6
4.2.2	Institutional Controls.....	6
4.2.3	Containment.....	6
4.2.4	In Situ Treatment.....	6
4.2.5	Removal.....	6
4.2.6	Ex Situ Treatment	7
4.2.7	Beneficial Use	7
4.2.8	Disposal.....	7
4.3	Selected General Response Actions, Remedial Technologies, and Process Options.....	7

4.4	Summary of Remedial Technology Screening	7
5	Development of Remedial Alternatives for Early Action	8
5.1	Basis for Development of Potential Remedial Alternative	8
5.2	Description of Remedial Alternatives	8
5.2.1	Common Elements and Assumptions	8
6	Detailed Analysis of Remedial Alternatives	9
6.1	Threshold Criterion 1: Overall Protection of Human Health and the Environment.....	9
6.2	Threshold Criterion 2: Compliance with Applicable or Relevant and Appropriate Requirements.....	9
6.3	Balancing Criterion 1: Long-Term Effectiveness and Permanence.....	9
6.4	Balancing Criterion 2: Reduction of Toxicity, Mobility, or Volume Through Treatment.....	9
6.5	Balancing Criterion 3: Short-Term Effectiveness	9
6.6	Balancing Criterion 4: Implementability	9
6.7	Balancing Criterion 5: Cost	9
6.8	Modifying Criterion 1: State Acceptance	9
6.9	Modifying Criterion 2: Community Acceptance	9
7	Comparative Analysis of Early Action Alternatives for East Branch.....	10
7.1	Threshold Criterion 1: Overall Protection of Human Health and the Environment.....	10
7.2	Threshold Criterion 2: Compliance with Applicable or Relevant and Appropriate Requirements.....	10
7.3	Balancing Criterion 1: Long-Term Effectiveness and Permanence.....	10
7.4	Balancing Criterion 2: Reduction of Toxicity, Mobility, or Volume Through Treatment.....	10
7.5	Balancing Criterion 3: Short-Term Effectiveness	10
7.6	Balancing Criterion 4: Implementability	10
7.7	Balancing Criterion 5: Cost	10
7.8	Summary of Comparative Analysis of Alternatives	10
8	References	11

1 Introduction

1.1 Site History

1.2 Focused Feasibility Study Objectives

- Develop and present remedial action objectives (RAOs).
- Present preliminary remediation goals (PRGs).
- Identify General Response Actions (GRAs), remedial technologies, and process options.
- Present the development of remedial alternatives.
- Perform detailed and comparative analysis of remedial alternatives.

1.3 Study Area Description and Background

1.4 Report Organization

2 East Branch Conceptual Site Model

- Provide a description of the East Branch conceptual site model (CSM) to inform the evaluation of remedial alternatives.
- Summarize how the East Branch CSM fits into the Operable Unit (OU) 1 CSM.

2.1 East Branch Focused Feasibility Study Dataset

2.2 Environmental Setting

- Summarize the physical environment and human uses (including federal navigation channel), focusing on details pertinent to remedial alternatives evaluation.

2.3 Nature and Extent of Contamination

- Summarize the nature and extent of contamination in East Branch to form the basis for the evaluation of remedial alternatives.

2.4 Sources

- Summarize known historical and current sources of contaminants to East Branch as part of the evaluation of remedial alternatives.
- Focus on ongoing internal and external sources to East Branch.

2.5 Fate and Transport

- Summarize in-creek processes and ongoing external inputs that govern the movement of contaminants in East Branch.
- Evaluate the contribution of ongoing external inputs of contaminants to East Branch and how those inputs may impact the long-term effectiveness.
- Provide a brief summary of key findings from the draft *Chemical Fate and Transport Model Development and Calibration Report* (Anchor QEA 2022a), including relative magnitudes of contaminant loads, to identify major external inputs and processes in East Branch.

2.6 Risk and Exposure Pathways

- Summarize the U.S. Environmental Protection Agency (USEPA)-approved *Baseline Human Health Risk Assessment* (Anchor QEA 2017) and *Baseline Ecological Risk Assessment* (Anchor QEA 2018) findings, including contaminants of concern (COCs) and unacceptable risks to human health and the environment in East Branch.

2.7 Key Findings, Conclusions, and Implications for the Focused Feasibility Study

- Provide high-level summary of aspects of the CSM that will influence the remedial alternatives evaluation and the long-term sustainability of any remedial action in East Branch.

3 Basis for Evaluation

3.1 Contaminants of Concern

- COCs for East Branch will be the same as OU1: total polycyclic aromatic hydrocarbon (TPAH) (34), total polychlorinated biphenyl (TCB), copper, dioxin/furan toxic equivalence quotient (TEQ), C19-C36 aliphatics, and lead.

3.2 Remedial Action Objectives

- RAOs provide a general description of what the cleanup is expected to accomplish and help focus remedial alternatives development and evaluation (USEPA 2005). RAOs for the East Branch Early Action will be developed during the Focused Feasibility Study (FFS) process in collaboration with USEPA.

3.3 Applicable or Relevant and Appropriate Requirements

- Applicable or Relevant and Appropriate Requirements (ARARs) include both federal requirements under any federal environmental law and New York State requirements under state environmental or facility siting laws that are more stringent than federal requirements and have been identified by the State in a timely manner. USEPA will prepare the chemical-, location-, and action-specific ARARs and coordinate with the Newtown Creek Group as these ARARs are identified.

3.4 Preliminary Remediation Goals

- Present the risk-based PRGs.
- Preliminary estimates of expected long-term equilibrium concentrations based on various ongoing external inputs are under development and have not yet been approved by USEPA.
- Preliminary estimates of expected long-term equilibrium concentrations based on various ongoing external inputs are under development and have not yet been approved by USEPA. These concentrations are important for understanding whether risk-based PRGs are expected to be sustainable in the long term or whether background-based PRGs may need to be utilized. USEPA is also evaluating how ongoing external inputs to the Study Area may change over time and how these changes would impact long-term equilibrium concentrations.

3.5 Areas to Be Considered for Remediation

- Overall evaluation of areas requiring remediation, including a discussion of remedial action levels (RALs) required to meet risk-based PRGs.
- Include consideration of sediment management areas.

4 Identification of General Response Actions, Remedial Technologies, and Process Options

- As described in USEPA's general Remedial Investigation/Feasibility Study (RI/FS) guidance (USEPA 1988), remedial alternatives have the following three components:
 - GRAs
 - Remedial technologies
 - Process options
- As described in the *Feasibility Study Work Plan Addendum 1: East Branch Early Action Focused Feasibility Study Work Plan* (FS Work Plan Addendum 1, Anchor QEA 2022b), because this is an FFS for an early action, the remedial alternatives that are evaluated in the detailed and comparative analysis will be limited to those alternatives that are consistent with the CSM and will comprise proven GRAs and remedial technologies used at other sediment sites. Proven remedial technologies will be screened such that selected technologies and representative process options can be assembled to create remedial alternatives. Consistent with FS Work Plan Addendum 1, because this is an FFS for an early action and remedial alternatives will comprise proven GRAs and remedial technologies, remedial alternatives will not be screened prior to detailed analysis.
- Identify GRAs (see Section 4.1) and then identify and screen remedial technologies and process options (see Section 4.2) to determine those technologies and process options that are potentially applicable to East Branch.
- Following USEPA's general RI/FS guidance (1988), screen the technologies and process options based on a preliminary evaluation of effectiveness, implementability, and cost.

4.1 General Response Actions

- Identify GRAs appropriate for addressing sediments in East Branch. GRAs identified in the FFS include the following:
 - No action
 - Institutional controls
 - Containment
 - In situ treatment
 - Removal
 - Ex situ treatment
 - Beneficial use
 - Disposal

4.2 Evaluation and Screening of Remedial Technologies and Process Options

- Identify remedial technologies and process options that are appropriate for addressing sediments in East Branch.
- Consider opportunities for reducing the environmental footprint of remedial design and construction activities and improving the sustainability and climate resiliency of the alternatives.

4.2.1 *No Action*

4.2.2 *Institutional Controls*

- Proprietary controls (administered on private lands)
- Government controls with the following process options:
 - Activity restrictions for fishing or crabbing
 - Consumption advisories
 - Dredging restrictions
- Enforcement and permit tools with institutional control components
- Informational devices

4.2.3 *Containment*

- Capping with the following process options:
 - Sand cap
 - Armored cap
 - Sand reactive cap
 - Armored reactive cap

4.2.4 *In Situ Treatment*

- Immobilization treatment with the following process option:
 - In situ stabilization/solidification

4.2.5 *Removal*

- Dredging with the following process options:
 - Mechanical dredging
 - Hydraulic dredging
 - Specialty dredging

4.2.6 *Ex Situ Treatment*

- Chemical treatment with the following process option:
 - Solidification/stabilization to facilitate transportation and disposal

4.2.7 *Beneficial Use*

- Beneficial use with the following process options:
 - Engineered fill
 - Landfill daily cover
 - Construction materials

4.2.8 *Disposal*

- Upland disposal with the following process options:
 - Subtitle C Landfill
 - Subtitle D Landfill

4.3 Selected General Response Actions, Remedial Technologies, and Process Options

- Identify GRAs, process options, and remedial technologies that will be used to assemble the remedial alternatives.

4.4 Summary of Remedial Technology Screening

- Present table with screening results based on evaluation of effectiveness, implementability, and cost.

5 Development of Remedial Alternatives for Early Action

5.1 Basis for Development of Potential Remedial Alternative

- Selected GRAs, technologies, and process options are combined to develop a range of remedial alternatives to address unacceptable risk in East Branch.
- RALs are used to define remedial areas for alternatives with active remediation (RALs are not applicable to the no action alternative).
- Consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) criteria, steps, and guidelines described in USEPA (1988) guidance, the FFS will evaluate the effectiveness of alternatives on short-term and long-term bases.

5.2 Description of Remedial Alternatives

- Identify and describe the alternatives (including a no action alternative) that will be included in the FFS.

5.2.1 *Common Elements and Assumptions*

6 Detailed Analysis of Remedial Alternatives

- Present the detailed analysis of each of the remedial alternatives developed in Section 5 with respect to the following nine NCP evaluation criteria used to evaluate remedial alternatives that were established and defined by USEPA (1988, 2005) to address the overall requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the NCP.

6.1 Threshold Criterion 1: Overall Protection of Human Health and the Environment

6.2 Threshold Criterion 2: Compliance with Applicable or Relevant and Appropriate Requirements

6.3 Balancing Criterion 1: Long-Term Effectiveness and Permanence

6.4 Balancing Criterion 2: Reduction of Toxicity, Mobility, or Volume Through Treatment

6.5 Balancing Criterion 3: Short-Term Effectiveness

6.6 Balancing Criterion 4: Implementability

6.7 Balancing Criterion 5: Cost

6.8 Modifying Criterion 1: State Acceptance

- State and support agency acceptance will not be addressed in the FFS, but it will be addressed by USEPA following release of the proposed plan.

6.9 Modifying Criterion 2: Community Acceptance

- Community acceptance will not be addressed in the FFS, but it will be addressed by USEPA after public comment on the proposed plan.

7 Comparative Analysis of Early Action Alternatives for East Branch

- Present the comparative evaluation of the relative advantages and disadvantages of the alternatives, consistent with USEPA (1988, 2005) guidance.
 - Structure to compare each of the criteria for each of the alternatives.

7.1 Threshold Criterion 1: Overall Protection of Human Health and the Environment

7.2 Threshold Criterion 2: Compliance with Applicable or Relevant and Appropriate Requirements

7.3 Balancing Criterion 1: Long-Term Effectiveness and Permanence

7.4 Balancing Criterion 2: Reduction of Toxicity, Mobility, or Volume Through Treatment

7.5 Balancing Criterion 3: Short-Term Effectiveness

7.6 Balancing Criterion 4: Implementability

7.7 Balancing Criterion 5: Cost

7.8 Summary of Comparative Analysis of Alternatives

8 References

- Anchor QEA (Anchor QEA, LLC), 2017. *Baseline Human Health Risk Assessment*. Remedial Investigation/Feasibility Study, Newtown Creek. May 2017.
- Anchor QEA, 2018. *Baseline Ecological Risk Assessment*. Remedial Investigation/Feasibility Study, Newtown Creek. October 2018.
- Anchor QEA, 2022a. *Chemical Fate and Transport Model Development and Calibration Report*. Draft. Remedial Investigation/Feasibility Study, Newtown Creek. April 2022.
- Anchor QEA, 2022b. *Feasibility Study Work Plan Addendum 1: East Branch Early Action Focused Feasibility Study Work Plan*. Draft. Remedial Investigation/Feasibility Study, Newtown Creek. November 2022.
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- USEPA, 2005. *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites*. Office of Solid Waste and Emergency Services. EPA-540-R-05-012, OSWER9355.0-85. December 2005.